CAPITAL PROJECT JUSTIFICATION 2002-2003

JOB NO.: IGS02-14 W.O. #02-60456-0

TITLE: Boiler Modifications

DESCRIPTION: Addition of one bank of primary superheat tubing in Unit 1 and Unit 2 Steam Generators. Minor modifications to drum internals and level ports.

JUSTIFICATION: ECONOMIC

PAYBACK PERIOD:	0.87 years
BENEFIT/COST RATIO:	12.89
ECONOMIC LIFE:	20 years
ANNUAL SAVINGS:	$35,784,000/Yr

ADDITIONAL DETAIL: A study was commissioned by IPSC for evaluation of the impact of the planned station uprate on Units 1 & 2 Steam Generators. One of the recommendations within that study was the addition of one bank of primary superheat tubing, directly above the existing economizer. The basis for this recommendation comes from the result of the B&W computer model for IGS Units 1 & 2.

The model results confirm significant degradation in the operational stability and operator controllability of the superheat outlet temperatures as the unit ratings are increased. Increasing the nominal full load flow to 6.675 million lbs/hr without the recommended primary superheat addition will result in low steady state superheat outlet temperatures, furnace firing configuration restrictions, and difficulty in maintaining reheat temperatures.

This scope also includes minor modifications to the drum internal baffles, down spouts, and relocation of the drum level instrumentation taps at the ends of the drum. Because this modification is required as part of the plant uprate, it is economically a part of the same justification.

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COST ESTIMATE:

	2002-2003	2003-2004
Engineering Labor	$10,000	$10,000
Contractor Labor	$1,500,000	$1,500,000
Material	$2,500,000	$2,500,000
Job Total	$4,010,000	$4,010,000

EFFECT OF DEFERRAL: Additional revenue from increased generation will be lost.

DETAILS OF ECONOMICS: Economic assumptions:

1. Economic life: 20 years (PV of Annuity Factor 11.2).
2. Hours of operation/year: 8340 (8760 - 2.5 weeks average outage).
3. Cost of money: 6.35 percent.
4. Cost of generation: $42,000/ unit hour ($48.00/MW hr).
5. Avoided cost of maintenance during 2002 outage: $708,000.
6. Avoided cost of lost generation to rehabilitate the hp nozzle: $1,944,000 (3 days of estimated 10 required).

Additional Generation Capacity at Existing Steam Flow:
Additional potential revenue (2.0%)(875MW)($48.00/MW hr)(8340 hrs/yr) = $7,005,600
Payback: $3,348,000 (6,000,000 - items 5&6)/$7,005,600 = 0.48 years
Benefit/Cost Ratio: (7,005,600)(11.2)/(3,348,000) = 23.4

PROJECT HISTORY: None. First year of project.